IN THE CLAIMS

1. (Currently Amended) A method for demulsifying water-oil emulsions through ultrasonic action, comprising a step of making water-oil emulsions flow through at least one ultrasonic acting region in a flow direction from an upstream end to a downstream end of the at least one ultrasonic acting region, characterized in that: within said ultrasonic acting region, a concurrent ultrasonic wave whose traveling direction is the same as the flow direction of said water-oil emulsions is generated by at least one first ultrasonic transducer provided at the upstream end of said ultrasonic acting region, and at same time, a countercurrent ultrasonic wave whose traveling direction is opposite to the flow direction of said water-oil emulsions is generated by at least one second ultrasonic transducer provided at the downstream end of said ultrasonic acting region; and the concurrent ultrasonic wave and the countercurrent ultrasonic wave act simultaneously on the water-oil emulsions flowing through said ultrasonic acting region, so as to demulsify said water-oil emulsions.

2. (Original) The method according to Claim 1, characterized in that, the orientation of the central axis of said ultrasonic acting region is identical with said flowing direction in which said water-oil emulsions flow through said ultrasonic acting region.

3. (Original) The method according to Claim 1, characterized in that, said concurrent ultrasonic wave and the countercurrent ultrasonic wave travel with uniform sound

intensity within said ultrasonic acting region; the sound intensity of said countercurrent ultrasonic wave is no lower than that of said concurrent ultrasonic wave.

4. (Previously Presented) The method according to Claim 1, characterized in that, the sound intensity of said countercurrent ultrasonic wave is no higher than $0.8W/cm^2$.

5. (Original) The method according to Claim 4, characterized in that, the sound intensity of said countercurrent ultrasonic wave is no higher than $0.5W/cm^2$.

6. (Currently Amended) A demulsifying device for implementing the method according to Claim 1, the demulsifying device comprising at least one ultrasonic acting region in which water-oil emulsions flow from an upstream end to a downstream end of the at least one ultrasonic acting region, characterized in that, at the upstream end of said ultrasonic acting region there is mounted the first ultrasonic transducer for generating a concurrent ultrasonic wave whose traveling direction is the same as the flow direction of said water-oil emulsions, and at the downstream end of said ultrasonic acting region there is mounted the second ultrasonic transducer for generating a countercurrent ultrasonic wave whose traveling direction is opposite to the flow direction of said water-oil emulsions; and a ultrasonic generator is connected with said first and second ultrasonic transducers via ultrasonic power lines, so as to drive said first and second ultrasonic transducers to generate said concurrent ultrasonic wave and said countercurrent ultrasonic wave.

7. (Original) The demulsifying device according to Claim 6, characterized in that, said ultrasonic acting region is of a pipe structure and is connected with other water-oil emulsion pipes in production and processing line.

8. (Original) The demulsifying device according to Claim 7, characterized in that, said ultrasonic acting region is of a pipe structure with a constant diameter.

9. (Original) The demulsifying device according to Claim 7, characterized in that, said ultrasonic acting region is of a pipe structure with a varying diameter.

10. (Previously Presented) The method according to Claim 3, characterized in that, the sound intensity of said countercurrent ultrasonic wave is no higher than $0.8W/cm^2$.

11. (Previously Presented) The method according to Claim 4, characterized in that, the sound intensity of said countercurrent ultrasonic wave is no higher than $0.8W/cm^2$.

12. (Previously Presented) The method according to Claim 10, characterized in that, the sound intensity of said countercurrent ultrasonic wave is no higher than $0.5W/cm^2$.

13. (Previously Presented) The method according to Claim 11, characterized in that, the sound intensity of said countercurrent ultrasonic wave is no higher than $0.5W/cm^2$.

14. (Currently Amended) A method for demulsifying a water-oil emulsion through ultrasonic action, comprising a step of making the water-oil emulsion flow through at least one ultrasonic acting region in a flow direction from an upstream end to a downstream end of the at least one ultrasonic acting region such that, within said ultrasonic acting region, a concurrent ultrasonic wave whose traveling direction is the same as the flow direction of said water-oil emulsion is generated by at least a first ultrasonic transducer provided at ~~an~~ the upstream end of said ultrasonic acting region and, at the same time, a countercurrent ultrasonic wave whose traveling direction is opposite to the flow direction of said water-oil emulsion is generated by at least a second ultrasonic transducer provided at ~~a~~ the downstream end of said ultrasonic acting region; wherein the concurrent ultrasonic wave and the countercurrent ultrasonic wave act simultaneously on the water-oil emulsion flowing through said ultrasonic acting region to demulsify said water-oil emulsion with formation of a water-oil mixture, wherein ~~with~~ the combined action of the concurrent and countercurrent ultrasonic waves having a demulsifying effect that is greater than that of the concurrent or countercurrent ultrasonic wave alone.

15. (Previously Presented) The method according to Claim 14, wherein said ultrasonic acting region has a central axis with an orientation that is identical with said flow direction in which said water-oil emulsion flows through said ultrasonic acting region.

16. (Previously Presented) The method according to Claim 14, wherein the concurrent ultrasonic wave and the countercurrent ultrasonic wave travel with uniform sound

intensity within said ultrasonic acting region; the sound intensity of said countercurrent ultrasonic wave being no lower than that of said concurrent ultrasonic wave.

17. (Previously Presented) The method according to Claim 14, wherein the sound intensity of said countercurrent ultrasonic wave is no higher than $0.8W/cm^2$.

18. (Previously Presented) The method according to claim 16, wherein the ultrasonic acting region comprises a pipe structure with varying diameter.

19. (Previously Presented) The method according to claim 17, wherein the sound intensity of the countercurrent ultrasonic wave is no higher than $0.5\ W/cm^2$.

20. (New) The method according to claim 1, wherein water-oil mixtures are formed by the demulsifying of said water-oil emulsions, said step comprising causing said water-oil emulsions to flow through the upstream end of the at least one ultrasonic acting region through a single inlet and to flow through the downstream end of the at least one ultrasonic acting region through a single outlet, the method comprising a subsequent step of desalting and dewatering the water-oil emulsions.

21. (New) The demulsifying device according to claim 6, wherein the ultrasonic acting region is provided with a single inlet for water-oil emulsions to flow through the upstream end of the ultrasonic acting region and a single outlet for water-oil mixtures to flow from the downstream end of the ultrasonic acting region.

22. (New) The method according to claim 14, wherein a water-oil mixture is formed by the demulsifying of said water-oil emulsion, the method comprising a subsequent step of dewatering the water-oil emulsion formed by the demulsifying with an electric field.